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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,997	08/12/2002	Takao Taniguchi	AW-C216	9038

7590 02/11/2004  
Lorusso & Loud  
3137 Mount Vernone Avenue  
Alexandria, VA 22305

EXAMINER

SHAKERI, HADI

ART UNIT	PAPER NUMBER
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3723

DATE MAILED: 02/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/088,997

Applicant(s)

TANIGUCHI ET AL.

Examiner

Hadi Shakeri

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3723

JH

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 August 2002 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Specification***

The disclosure is objected to because of the following informalities: the unit for surface roughness Rz given for the range is not indicated, Applicant is requested to point out and clarify the range. Appropriate correction is required.

### ***Claim Objections***

1. Claims 1-24 are objected to because of the following informalities: The claims are generally narrative, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic error.

2. Claims 3 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2, 5, 9, 14 and 17-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 2, the language as written, e.g., "counter gear is actual gear" renders the claim indefinite; it is unclear what is being claimed.

Regarding claim 5, the scope is unascertainable, range of between 0.5 to 10?

Regarding claim 9, the language as written renders the claim indefinite, are axes parallel or tilted?

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Regarding claim 14, the language as written, e.g., meshing at 10000 to 2000 renders the claim indefinite; it is unclear what is being claimed.

Regarding claims 17 and 18, the language as written, e.g., "three or four times continuously" or " $aX+B$ " (not defined in the claim) render the claims indefinite, it is unclear what is being claimed.

Regarding claim 19, "said gear", line 5 renders the claim indefinite, i.e., which gear?

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

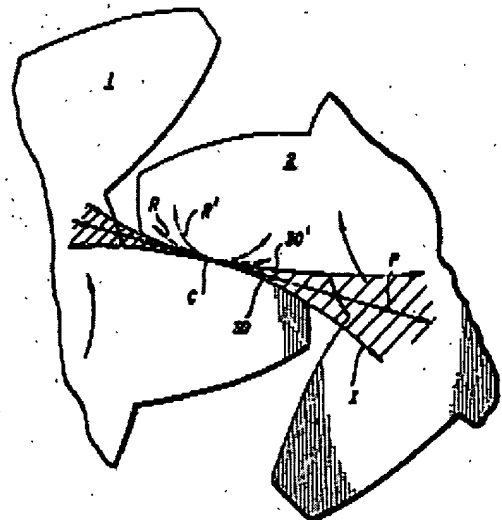
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 5, 7-9, 11-13 and 20 are (as best understood) is rejected under 35 U.S.C. 102(b) as being anticipated by Hosoya (US 4,920,703).

Hosoya discloses all the limitations of claim 1 as best understood, i.e., meshing a workpiece gear with an "actual" master gear while supplying non abrasive aqueous solution, wherein the parallel axes of the gears are rocked in any desired directions producing a surface roughness of 1.5 micron.

Regarding claims 11 and 12 (as best understood), Hosoya meets the limitations, i.e., workpiece obtaining "desired" vibration and noise magnitude (35 db vs. 42) and surface roughness (1.5 micron vs. 2.5  $\mu\text{m}$ ).



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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4, 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoya.

Hosoya meets all the limitations of the above claims as best understood, except for disclosing applied meshing pressure; number of revolution per minute and duration of meshing (claim 14?); and gears having perpendicular axes. It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply a pressure of 5 Mpa; use relatively longer time or higher speed (which would mesh the teeth over 10,000) based on the desired finishing parameters and/or type of workpiece material; or apply the invention to gears having right angle axes, since it has been held that changing shape, dependent on work-piece parameters, involves only routine skill in the art. *In re Stevens*, 101 US PQ 284(CCPA1954).

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoya in view of Igrashi et al. (US 4,171,558).

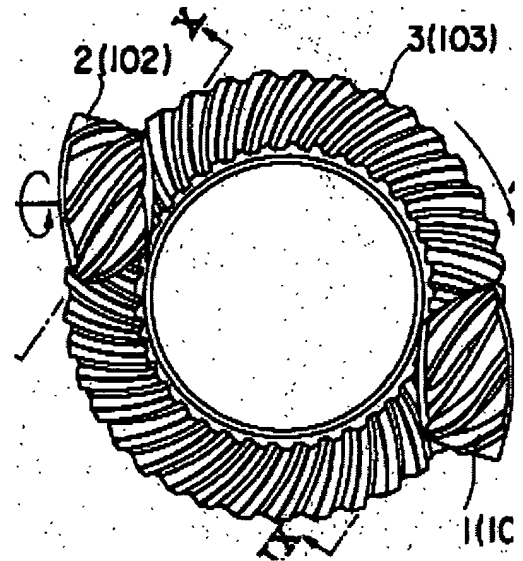
Hosoya meets all the limitations of the above claim as best understood, except for disclosing the composition for the cutting oil. Igrashi et al. teaches cutting oils containing acids, sulfonate, carboxylate... It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the invention of Hosoya with the coolant as taught by Igrashi et al. to provide wear resistance and/or to reduce thermal shock.

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9. Claim 19 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoya in view of Takahashi et al. (US 3,813,821).

Hosoya meets all the limitations of claim 19 as best understood, except for disclosing the first and second machining gears. Takahashi et al. teaches gear finishing method and apparatus containing a pair of machining gears. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the invention of Hosoya with the system as taught by Takahashi et al. to adapt the invention for grinding hypoid gears.

Regarding claim 10, prior art as applied to claim 19 meets the limitations.



10. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoya in view of McGlasson et al. (US 6,217,421).

Hosoya meets all the limitations of the above claims as best understood, except for disclosing stopping the machining when certain noise and/or vibration level is reached. McGlasson et al. teaches method and apparatus for machining gears with vibration or noise measurement and monitoring means to stop the operation when desired level are reached. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the invention of Hosoya with the measurement and monitoring means as taught by McGlasson et al. to obtain a higher and more consistent quality of finished workpieces as well as the shortest cycle time.

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11. Claims 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoya in view of Miyauch (US 5,347,760).

Hosoya meets all the limitations of the above claims as best understood, except for disclosing a lubricant recovery system. Miyauch teaches method and apparatus for machining gears with oil recovery system. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the invention of Hosoya with the coolant recovery system as taught by Miyauch to recover and reuse the oil in lowering operational cost.

### ***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Hadi Shakeri at (703) 308-6279, FAX (703) 746-3279 for unofficial documents. The examiner can normally be reached on Monday-Thursday, 7:30 AM to 6:00 PM. All official documents may be faxed to (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist at (703) 308-1148.



Hadi Shakeri  
Patent Examiner  
February 5, 2004